

REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Summary of Telephone Interview

Applicants wish to kindly thank the Examiner for participating in the telephone interview of October 2, 2008, and for providing Applicants with helpful suggestions and comments regarding the application.

During the interview, Applicants informed the Examiner that the claims would be amended to clarify that the catalyst comprises at least one heavy metal, based upon page 6, lines 21-23 of Applicants' specification. The Examiner indicated that this amendment appeared to be acceptable.

Additionally, Applicants presented arguments that the cited reference fails to teach the separation step and cleaning step being carried out in a single common device, as required by Applicants' claims. The Examiner appeared to acknowledge that the cited reference fails to specifically teach a "single common device". However, the Examiner asserted that he could readily find a secondary reference with this teaching, to combine with the primary reference. The Examiner suggested that Applicants amend the claims to define the single common device. The Examiner indicated that this amendment would likely overcome the obviousness rejection, as the Packer reference lacks this teaching.

Although Applicants do not acquiesce to the Examiner's position, in order to advance allowance of the present application, Applicants have heeded the Examiner's helpful advice, and have amended the claims to define the single common device.

Applicants appreciate the Examiner's helpful comments and suggestions, as well as the Examiner's indication that he would not issue a first action final rejection, in view of the amendments being made to the claims.

Claim Amendments

Claims 1 and 3-5 have been amended to recite that the catalyst “comprises” at least one heavy metal, based upon page 6, lines 21-23 of Applicants’ specification. Claims 1-5 have been amended to define the “single common device” based upon the fourth paragraph on page 5 of Applicants’ specification.

No new matter has been added to the application by these amendments.

Patentability Arguments

The patentability of the present invention over the disclosure of the reference relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

Rejection Under 35 U.S.C. § 103(a)

The rejection of claims 1-16 under 35 U.S.C. § 103(a) as being unpatentable over Packer et al. (U.S. 4,438,279) is respectfully traversed.

Applicants previously argued that Packer et al. fail to teach that the separation step and the cleaning step are carried out in a single common device, as required by Applicants’ claims.

The Examiner takes the position that this argument is not persuasive. Specifically, the Examiner states that Packer et al. disclose (in column 9, lines 2-12) that the solid-liquid separation step and the step of cleaning the crude terephthalic acid cakes are carried out using a single common device.

However, this portion of the Packer et al. reference states, “The resulting suspension of precipitated terephthalic acid is charged to a centrifugal filter, the collected precipitate is washed with fresh 97 percent acetic acid and dried.” This sentence clearly fails to teach or suggest that the solid-liquid separation step and the step of cleaning the crude terephthalic acid cakes are carried out using a single common device. The Examiner seems to take position that since the filtering and washing step are discussed in the same sentence, they must also be in the same device. However, Applicants note that

this sentence also contains a “drying” step. Ordinarily, “drying” is carried out using a different device from the devices for “centrifugal filtering” and for “washing”. Thus, even though the three steps of “centrifugal filtering”, “washing” and “drying” are recited in one sentence in the Packer et al. reference, this does not mean they are carried out using single common device.

Furthermore, as discussed above, in order to expedite allowance of this application, Applicants have amended the claims to define the single common device, based upon the teachings of Applicants’ specification. Packer et al. are completely silent about a single common device selected from the group consisting of a screen bowl centrifuge, a rotary vacuum filter and a horizontal belt filter.

Applicants previously argued that liquid remaining on cakes is evaporated by flash evaporation using internal energy.

The Examiner asserts that the prior art does disclose the indirect teaching of using internal energy for precipitates (crude terephthalic acid) at column 5, lines 9-10, which states, “Such flash evaporation of solvent conveniently permits ready removal of solvent as solute precipitates and no longer needs to be dissolved.”

However, when a liquid evaporates, vaporization heat is removed. Thus, in order to evaporate liquid remaining on or in the crude terephthalic acid cakes, the cakes are typically heated at normal pressure.

According to Applicants’ invention, after cleaning the cakes under a pressure higher than the atmospheric pressure in step (C) or (H), this pressure is used as internal energy for drying the liquid remaining on or in the cakes. Thus, the evaporation step (D) or (I) (step of removing evaporation heat) is carried out by pressure release (flash).

On the contrary, Packer et al. disclose evaporating the solvent (acetic acid). However, this step is not a drying step of terephthalic acid cakes, but rather a crystallization step. That is, Packer et al. teach, in column 9, lines 2-12, a crystallization step carried out by flashing in four stages. The reference fails to teach or suggest a “drying” step by flashing carried out under a pressure higher than the atmospheric pressure.

Thus, it is evident that Packer et al. fail to teach or suggest the feature of using internal energy possessed by the liquid remaining in or on the cakes when evaporating (drying) the liquid.

The Examiner also points to column 5, lines 23-26 of the reference, which states, “hot pressurized mixture of vapors can better be used to heat either the oxidation effluent or a heat exchange fluid that can be used in a thermodynamic energy conversion.” The Examiner takes the position that these passages suggest the use of internal energy for evaporating liquid in cakes.

According to Applicants’ invention, after cleaning the cakes under a pressure higher than atmospheric pressure in step (C) or (H), this pressure is used as internal energy for drying the liquid remaining on or in the cakes

On the other hand, Packer et al. merely disclose (in column 5, lines 23-26) to use the thermal energy possessed by vapor as a gas for “heat exchange”. Packer et al. are silent about using internal energy produced when the pressure of the liquid, which is higher than the atmospheric pressure, is released as internal energy for the “drying step”.

For the reasons stated above, the subject matter of Applicants’ claims is clearly patentable over the cited reference.

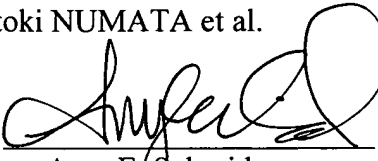
Conclusion

Therefore, in view of the foregoing amendments and remarks, it is submitted that the ground of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

Motoki NUMATA et al.

By: 
Amy E. Schmid
Registration No. 55,965
Attorney for Applicants

AES/emj
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
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